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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,656	10/06/2003	Kevin Fairbairn	AMAT/1571.C3/DSM/BCVD/JW	5797

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PATTERSON & SHERIDAN, LLP
3040 POST OAK BOULEVARD, SUITE 1500
HOUSTON, TX 77056

EXAMINER
MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
1763	

DATE MAILED: 08/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

V

Office Action Summary	Application No.	Applicant(s)	
	10/680,656	FAIRBAIRN ET AL.	
	Examiner	**Art Unit**	
	Sylvia R. MacArthur	1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-11 and 21-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7, 9-11 and 21-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 9-11, and 21-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Fairbarn et al US 5,838,121.

Fairbarn et al teaches tandem process chambers in col. 12-14 and Fig. 21.

Regarding claim 1: The tandem process chamber comprises a bottom 616, outer sidewall 612, and interior sidewall 614 wherein first and second processing regions 618,620 are defined. The chamber further comprises the processing regions comprise a single substrate transfer port formed through the outer sidewall of the chamber body, a substrate support assembly (heater pedestal 628 centrally positioned in each of the first and second processing region, and a first and second gas distribution assemblies 608 above the respective processing regions.

Regarding claim 2: The processing chamber of claim 1, wherein the first and second gas distribution assemblies each comprise: a gas distribution manifold 608 in fluid communication with a gas supply, and a showerhead 642 positioned between the gas distribution manifold and the substrate support assembly.

Regarding claim 3: The processing chamber of claim 2, wherein the showerhead is manufactured from a material that conducts radio frequency energy, see col. 12 line 67.

Regarding claim 4: The processing chamber of claim 1, further comprising an annular pumping channel 625 positioned in the interior sidewall of the first and second processing regions, see col. 12 lines 46-57.

Regarding claim 5: The processing chamber of claim 4, wherein the annular pumping channel is vertically positioned above an upper surface of the substrate support assembly and below a lower surface of a gas distribution assembly, see Fig. 19.

Regarding claim 6: The processing chamber of claim 4, further comprising a vacuum source (common exhaust pump) in fluid communication with the annular pumping channel of the first and second processing regions, the vacuum source being configured to cooperatively control the pressure in the first and second processing regions, see col. 12 lines 46-58.

Regarding claim 7: The processing chamber of claim 4, wherein the annular pumping channel of the first processing region is in fluid communication with the annular pumping channel of the second processing region, see col. 12 lines 46-57.

Regarding claim 8: The processing chamber of claim 1, further comprising a cylindrically shaped removable liner 627 positioned in each of the first and second processing regions adjacent the interior sidewall.

Regarding claim 10: The processing chamber of claim 1, wherein the first processing region is in fluid communication with the second processing region through a conduit (pumping channel).

Regarding claim 11: The processing chamber of claim 10, wherein the conduit provides the same pressure in each of the processing regions, see col. 12 lines 45-57.

Regarding claim 21:The tandem process processing chamber further comprises a single substrate transfer port 310 formed in each of the processing region through an outer sidewall of the chamber body, see col. 9 lines 45-53.

Regarding claim 22: The processing chamber of claim 21, wherein the first and second gas distribution assemblies comprise a gas showerhead assembly.

Regarding claim 23: The processing chamber of claim 22, wherein the gas showerhead assembly comprises: a perforated plate positioned to dispense a processing gas into the respective processing volumes from a front side; and a gas distribution manifold positioned to supply a processing gas to a backside of the perforated (blocker) plate, see col. 14 lines 1-11.

Regarding claim 24: The processing chamber of claim 21, further comprising an annular pumping channel positioned in the annular sidewalls of each of the processing regions at a vertical position that is equal to or above an upper surface of the respective substrate support member, see Fig 19 the channel is illustrated as above.

Regarding claim 25: The processing chamber of claim 24, further comprising a vacuum source in fluid communication with the annular pumping channel, the vacuum source (common exhaust pump) being configured to cooperatively control the pressure in the first and second processing volumes, see col. 12 lines 46-58.

Regarding claim 26: The processing chamber of claim 21, wherein the substrate support member comprises a heating element positioned in communication therewith (heater pedestal).

Regarding claim 27: The processing chamber of claim 21, wherein the first and second annular sidewalls share the interior wall, see Figs. 19 and 21.

Regarding claim 28: The processing chamber of claim 21, further comprising a fluid conduit (pumping channel) positioned in communication with the first and second processing volumes and a vacuum source (common exhaust pump) , the fluid conduit being configured to equalize the pressure between the respective processing volumes.

Regarding claims 29-31: The processing chamber of the apparatus of Fairbarn et al, wherein the first and the second gas distribution assembly share a common gas source, see col. 13.

3. Claims 1-7, 9-11, and 21-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Maydan et al (US 5,855,681).

Maydan et al teaches tandem process chambers in col. 12-15 and Figs. 18, 19 and 21.

Regarding claim 1: The tandem process chamber comprises a bottom 616, outer sidewall 612, interior sidewall 614 wherein first and second processing regions 618,620 are defined. The chamber further comprises the processing regions comprise a single substrate transfer port formed through the outer sidewall of the chamber body, a substrate support assembly (heater pedestal 628 centrally positioned in each of the first and second processing region, and a first and second gas distribution assemblies 608 above the respective processing regions.

Regarding claim 2: The processing chamber of claim 1, wherein the first and second gas distribution assemblies each comprise: a gas distribution manifold 608 in fluid communication with a gas supply, and a showerhead 642 positioned between the gas distribution manifold and the substrate support assembly.

Regarding claim 3: The processing chamber of claim 2, wherein the showerhead is manufactured from a material that conducts radio frequency energy, see col. 13 line 19.

Regarding claim 4: The processing chamber of claim 1, further comprising an annular pumping channel 625 positioned in the interior sidewall of the first and second processing regions, see col. 12 lines 46-57.

Regarding claim 5: The processing chamber of claim 4, wherein the annular pumping channel is vertically positioned above an upper surface of the substrate support assembly and below a lower surface of a gas distribution assembly, see Fig. 19.

Regarding claim 6: The processing chamber of claim 4, further comprising a vacuum source (common exhaust pump) in fluid communication with the annular pumping channel of the first and second processing regions, the vacuum source being configured to cooperatively control the pressure in the first and second processing regions, see col. 12 lines 46-58.

Regarding claim 7: The processing chamber of claim 4, wherein the annular pumping channel of the first processing region is in fluid communication with the annular pumping channel of the second processing region, see col. 12 lines 46-57.

Regarding claim 8: The processing chamber of claim 1, further comprising a cylindrically shaped removable liner 627 positioned in each of the first and second processing regions adjacent the interior sidewall.

Regarding claim 10: The processing chamber of claim 1, wherein the first processing region is in fluid communication with the second processing region through a conduit (pumping channel).

Regarding claim 11: The processing chamber of claim 10, wherein the conduit provides the same pressure in each of the processing regions, see col. 12 lines 45-57.

Regarding claim 21:The tandem process processing chamber further comprises a single substrate transfer port 310 formed in each of the processing region through an outer sidewall of the chamber body, see col. 9 lines 45-53.

Regarding claim 22: The processing chamber of claim 21, wherein the first and second gas distribution assemblies comprise a gas showerhead assembly.

Regarding claim 23: The processing chamber of claim 22, wherein the gas showerhead assembly comprises: a perforated plate positioned to dispense a processing gas into the respective processing volumes from a front side; and a gas distribution manifold positioned to supply a processing gas to a backside of the perforated (blocker) plate, see col. 14 lines 1-11.

Regarding claim 24: The processing chamber of claim 21, further comprising an annular pumping channel positioned in the annular sidewalls of each of the processing regions at a vertical position that is equal to or above an upper surface of the respective substrate support member, see Fig 19 the channel is illustrated as above.

Regarding claim 25: The processing chamber of claim 24, further comprising a vacuum source in fluid communication with the annular pumping channel, the vacuum source (common exhaust pump) being configured to cooperatively control the pressure in the first and second processing volumes, see col. 12 lines 46-58.

Regarding claim 26: The processing chamber of claim 21, wherein the substrate support member comprises a heating element positioned in communication therewith (heater pedestal).

Regarding claim 27: The processing chamber of claim 21, wherein the first and second annular sidewalls share the interior wall, see Figs. 19 and 21.

Regarding claim 28: The processing chamber of claim 21, further comprising a fluid conduit (pumping channel) positioned in communication with the first and second processing volumes and a vacuum source (common exhaust pump) , the fluid conduit being configured to equalize the pressure between the respective processing volumes.

Regarding claims 29-31: The processing chamber of the apparatus of Maydan et al, wherein the first and the second gas distribution assembly share a common gas source, see col. 13.

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the hours of 8:30 a.m. and 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sylvia R MacArthur

Patent Examiner
Art Unit 1763

August 29, 2006